

Barratts Chapel Roadway Improvements

Welcome

Welcome to the Barratts Chapel Roadway Improvements Public Information Workshop. The project will improve Barratts Chapel Road from McGinnis Pond Road to SR 1. A grade separated intersection is proposed to eliminate the existing at grade intersection at SR 1 and Barratts Chapel Road. This project will improve the overall safety of traveling public.

The information presented tonight follows the Department of Transportation's Mission Statement and is the result of on-going proactive initiatives by the Department to enhance safety along Delaware's roadways.

Please review the displays and talk with a project team member to discuss any questions you may have in regards to the proposed improvements. Thank you for your overall interest in the Barratts Chapel Roadway Improvements Project.

Barratts Chapel Roadway Improvements

Existing Conditions

Pictures Taken
December 17, 2007



Barratts Chapel Road at Buffalo Road



Barratts Chapel Road over Double Run



Barratts Chapel Road at McGinnis Pond Road

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Intersection Level of Service

Level of Service -Defined as a user's quality of service through or over a specific facility (e.g. over a highway, through an intersection, across a crosswalk). Levels of Service are designated A through F. Level A represents unimpeded flow, which is usually possible when the volume of traffic is small. Level of Service F represents a highly impeded, packed condition.

Level of Service at intersections is a function of the average overall wait time for a vehicle to pass through the intersection. The Level of Service parameter for both a signalized and an unsignalized intersection is *Average Control Delay* measured in *seconds per vehicle*.

The Level of Service characterizes the operating conditions on the facility in terms of traffic performance measures related to speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

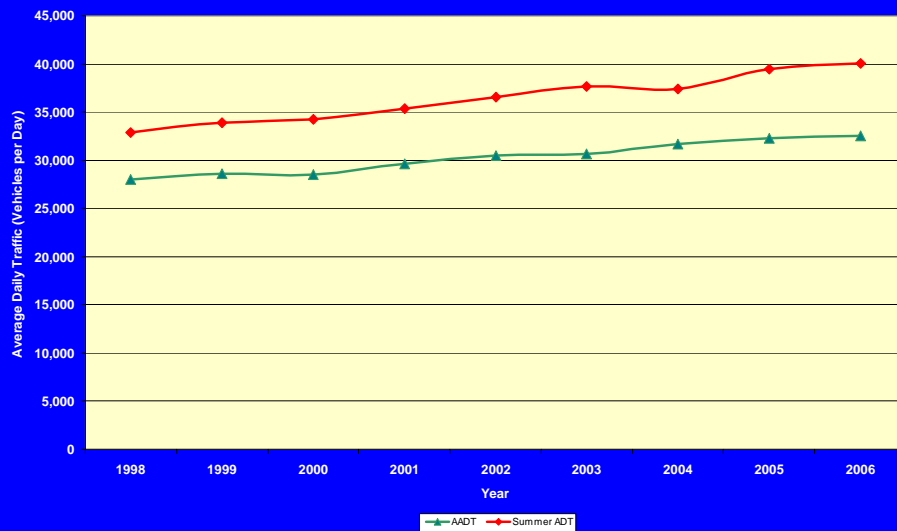
Level of Service Criteria for Signalized Intersections	
<i>Level of Service</i>	<i>Avg. Control Delay (sec/veh)</i>
A	≤10
B	>10 to 20
C	>20 to 35
D	>35 to 55
E	>55 to 80
F	>80

Level of Service Criteria for Unsignalized Intersections	
<i>Level of Service</i>	<i>Avg. Control Delay (sec/veh)</i>
A	0 to 10
B	>10 to 15
C	>15 to 25
D	>25 to 35
E	>35 to 50
F	>50

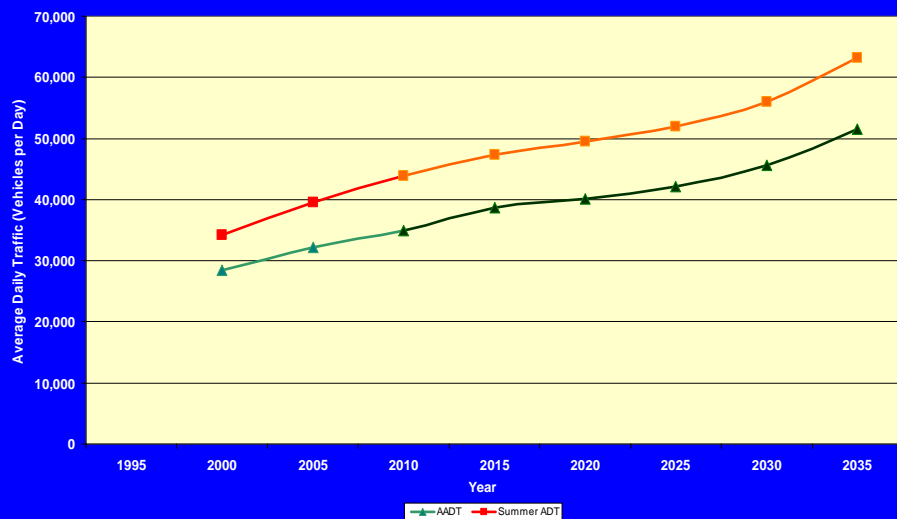
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Existing and Projected Traffic *SR 1*

Existing SR1 AADT and Summer ADTT



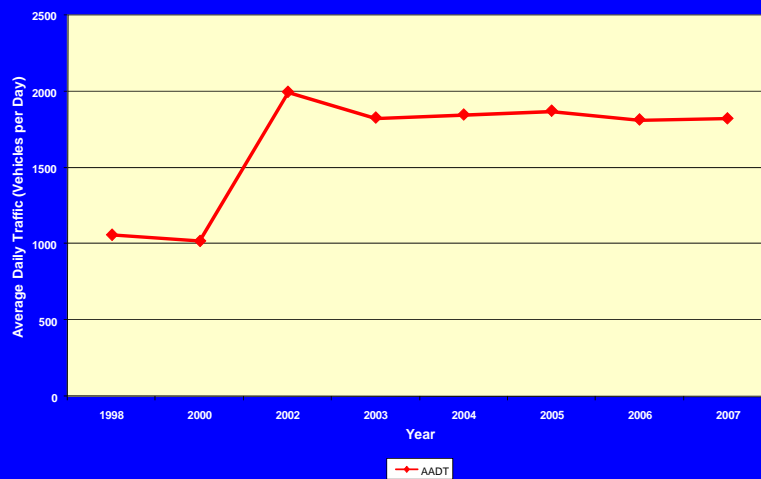
Projected SR1 AADT and Summer ADTT



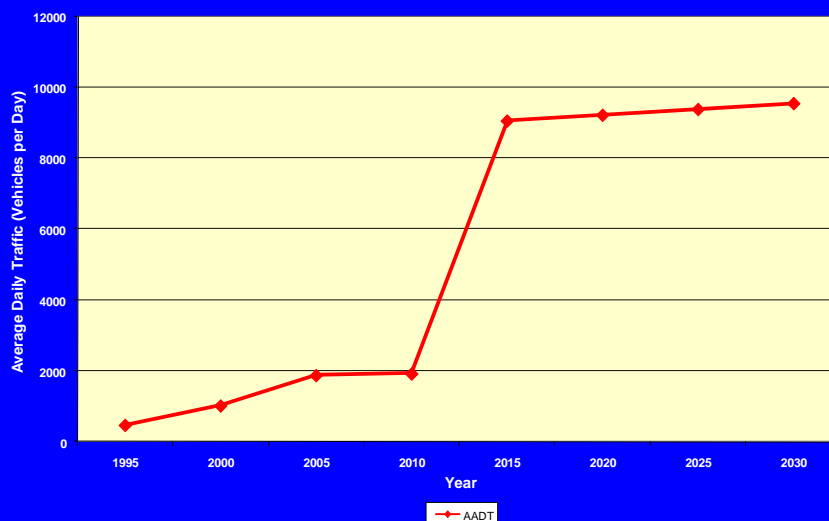
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Existing and Projected Traffic Barratts Chapel Roadway

Existing Barratts Chapel Road AADT



Projected Barratts Chapel Road AADT



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Traffic Operational Analyses SR 1, Grade Separated Intersection Alternatives

Traffic Operational Analyses Assessment of Alternatives (2030 Peak Hour Conditions)

Preliminary Alternative	Queues	Approach Delays and LOS	Volume to Capacity	Overall Intersection Delay
A Intersections¹ = 4 Req'd Signals² = 3	Little likelihood of queues from major intersections backing up onto SR1. Queue lengths are less than 50% of the lengths from these intersections to their respective ramp gores.	Worst approach delay encountered is 144.4 seconds with a level of service F	Worst volume to capacity ratio encountered is 1.00	Worst delay of 26.8 seconds.
B Intersections¹ = 2 Req'd Signals² = 1	Little likelihood of queues from major intersections backing up onto SR1. Queue lengths are less than 50% of the lengths from these intersections to their respective ramp gores.	Worst approach delay encountered is 38.6 seconds with a level of service D	Worst volume to capacity ratio encountered is 0.71	Worst delay of 30.3 seconds.

¹ – Number of Critical Intersections

² – Potential number of signals required for satisfactory operation of all approaches (LOS D or better)

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Summary of Impacts – SR 1, Grade Separated Intersection Alternatives

FEATURE	UNIT	NO BUILD	ALT. A	ALT. B
Total Right-of-Way Acquisition	Acres	0	50.04	35.24
Commercial	Acres	0	0	0
Agricultural Conservation	Acres	0	15.33	16.13
Residential Agricultural	Acres	0	34.71	19.11
Total # of Properties Affected	Number	0	9	10
Residential Displacements	Number	0	0	0
Business Displacements	Number	0	0	0
Prime Farmland Soils	Acres	0	0	0
Active Agricultural Lands	Acres	0	49.85	34.74
Agricultural Preservation Lands	Acres	0	34.52	18.61
Public Parks/Recreational Areas	Number	0	0	0
Effects on NRE Historic Properties	Number	0	0	0
Archeological Sites Impacted	Number	0	0	0
Noise (NSA's Impacted)	Number	0	0	0
Potential Hazardous Materials Sites Impacted	Number	0	0	0
Wetlands Impacted	Number	0	0	0
	Acres	0	0	0
Streams Crossed	Number	0	0	0
Stream Impacts	Linear Feet	0	0	0
Floodplain Encroachment	Acres	0	0	0
Forest Cover	Acres	0	0	0
Additional Impervious Area	Acres	0	14.65	13.48
Total Project Length	Mile	0	3.61	3.30
Estimated Construction Cost	\$ million	0	12.00	11.60
Estimated Right-of-Way Cost	\$ million	0	3.50	2.50
Total Cost*	\$ million	0	15.50	14.10

* Total cost includes Right-of-Way and Construction Cost. (Does not include Project Development or Engineering Fees.)

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Summary of Impacts – Roadway Improvement Alternatives

FEATURE	UNIT	NO BUILD	ALT. 1	ALT. 2	ALT. 3	ALT. 4
Total Right-of-Way Acquisition	Acres	0	8.98	13.87	11.96	14.93
Commercial	Acres	0	0	0	0	0
Agricultural Conservation	Acres	0	0	0	0	0
Residential Agricultural	Acres	0	8.98	13.87	11.96	14.93
Total # of Properties Affected	Number	0	69	72	46	54
Residential Displacements	Number	0	0	0	0	0
Business Displacements	Number	0	0	0	0	0
Prime Farmland Soils	Acres	0	0.16	0.22	0.12	0.17
Active Agricultural Lands	Acres	0	5.86	9.31	10.13	11.23
Public Parks/Recreational Areas	Number	0	0	0	0	0
Effects on NRE Historic Properties	Number	0	0	0	0	0
Archeological Sites Impacted	Number	0	0	0	0	0
Noise (NSA's Impacted)	Number	0	0	0	0	0
Potential Hazardous Materials Sites Impacted	Number	0	0	0	0	0
Wetlands Impacted	Number	0	2	4	2	2
	Acres	0	0.05	0.09	0.39	0.44
Streams Crossed	Number	0	3	3	2	2
Stream Impacts	Linear Feet	0	300	317	127	149
Floodplain Encroachment	Acres	0	0.12	0.24	0.58	0.44
Forest Cover	Acres	0	0.17	0.36	0.06	0.09
Additional Impervious Area	Acres	0	8.96	14.68	10.37	15.16
Total Project Length	Mile	0	2.75	2.75	2.75	2.75
Estimated Construction Cost	\$ million	0	12.00	14.70	12.60	14.80
Estimated Right-of-Way Cost	\$ million	0	1.14	1.51	1.40	2.00
Total Cost*	\$ million	0	13.14	16.21	14.00	16.80

* Total cost includes Right-of-Way and Construction Cost. (Does not include Project Development or Engineering Fees.)

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Thank You!

Thank you for taking time to review the information presented tonight. Please visit the project web site www.delDOT.gov/static/projects/barrattschapel to keep informed about the status of the project.

Written comment forms are available. Please fill out a form and select the alternative you think best accomplishes the goals and objectives of the project. Leave the form in the comment box or mail it to DelDOT. Your comments are important to us and will be considered along with comments from government and regulatory agencies. Safety and operational requirements will also be taken into account. Therefore, while all comments are considered, not all comments can be incorporated into the project.

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Public Workshop – August 27, 2008

